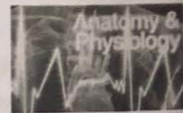


Section 1: Applied Anatomy and Physiology  
1.4 - Cardiovascular and respiratory systems



The structure and function of the respiratory system?

Your task is to flip learn.... Using this QR reader code →

Make notes from the video about the pathway of air through the respiratory system.



Key Words to take notice of

Mouth

Alveoli

Bronchioles

Trachea

Nose/nasal passage

Bronchi

Main function transport air into and out of the lungs.  
Exchanges oxygen and carbon dioxide - Protect body from harmful particles

Air is breathed in through the nose or mouth

The **concha** warm air and trap particles

Then enters the **trachea**

The **epiglottis** moves to make air food and water go to the right place

The air enters the **trachea** on to the **bronchi**

Then moves to the **bronchiole** and then the **alveoli**

**Alveoli** are surrounded by capillaries

Waste carbon dioxide leaves to blood and breathed out

Oxygen moves into blood

The **diaphragm** contracts as we breathe in and relaxes

when we breathe out

Respiratory issues could be a cold or lung cancer

To improve your respiratory system you could

maintain a healthy weight, drink lots of water

have food rich in minerals & limit exposure to

allergens and maintain hygiene

Cilia - trap particles

Air breathed in

Instead of QR reader: <https://www.youtube.com/watch?v=UTR1IsX55dc>

Section 1: Applied Anatomy and Physiology  
1.4 - Cardiovascular and respiratory systems

Cardiac Output

Cardiac output (Q) - The amount of blood ejected by the left ventricle in one minute.

P-E Dictionary?

- Cardiac Output (Q) is measured in:

$$\begin{array}{|c|} \hline \text{Stroke} \\ \text{Volume} \\ \text{(SV)} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Heart rate} \\ \text{(HR)} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Cardiac} \\ \text{Output} \\ \text{(Q)} \\ \hline \end{array}$$

What happens to stroke volume and cardiac output if an athlete's heart rate drops below 60bpm? (4)

The stroke volume would increase as the heart is more efficient. Also the heart is bigger so more blood can be pumped through it. The fitter you are the more elasticity the heart gets. As a result the heart rate would decrease as it wouldn't have to pump any more blood around the body. This means that the cardiac output would stay the same. This is because the body still has the same amount of blood to pump around and the heart is more efficient so it doesn't have to beat as many times.

Myocardial Hypertrophy is the thickening of the heart muscle and the decrease in the heart chambers.



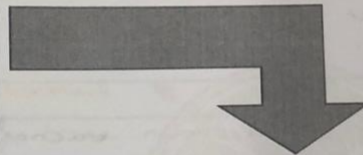
Section 1: Applied Anatomy and Physiology  
1.4 - Cardiovascular and respiratory systems



The function of each component of the respiratory.

**Nasal passage/Mouth**

Air enters the body through the nose or mouth.  
Divided by **cartilaginous septum** that forms the nasal passage.  
Mucus membranes or damp walls warm and moisten the air and the hair filters and traps dust. (**critical**)



**Pharynx and Larynx**

**Pharynx** - The passage to the digestive system and the **larynx**.  
**Larynx** - Air passes over the vocal cords of the **larynx** and into the **trachea** (wind pipe).  
Swallowing draws the **larynx** upwards and against the **epiglottis** and prevents the entry of food.



**Trachea**

This is sometimes called the wind pipe. It has 18 rings of cartilage, which trap dust.



**Bronchi and Bronchioles**

**Bronchi (Bronchus)**  
The **trachea** divides into two **bronchi**.  
Each one goes into one of the lungs.  
These divide into smaller **bronchioles**.  
**Bronchioles**  
Enable the air to pass through the **alveoli**.



**Alveoli**

Responsible for **gaseous exchange** between the lungs and the blood.  
Tiny air filled sacks (millions) in the lungs.

**Section 2: Physical Training**  
2.2 - Applying the principles of training



Section 2: Ph  
2.2 - Applying the  
To

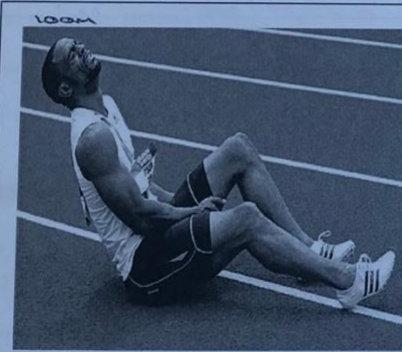
Training principle: **Reversability**

**Key Definition:** performance can deteriorate (drop) if <sup>training stops or</sup> ~~training~~ decreases in intensity for any length of time.

**Sporting example:**

Reversability may occur when you are injured. This is because you <sup>fitness</sup> wouldn't be training as hard so your ~~would~~ <sup>fitness</sup> decrease.

Link the principle of **Reversability** to the pictures below.



Reversability may occur when you are injured. This is because the training stops causing a decrease in their fitness levels. The sprinters speed will decrease. Once they have recovered from their injury they would have to build their speed back up.



Reversability would occur when a sports person retires. This is because the training would stop. For example, a footballer's cardiovascular fitness would decrease once their training stops.

# **Analysing and Evaluating Performance**

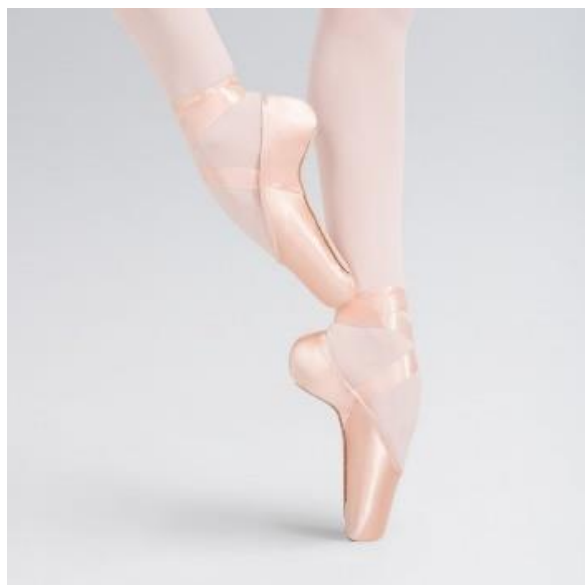
## **GCSE PE AEP Coursework**

**Ballet**

**OCR**

**Candidate Number:**

**Centre Number: 46715**



## Evaluation

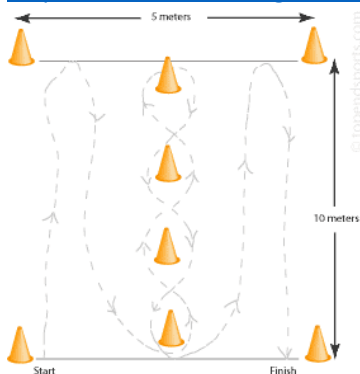
Fitness Component	Definition	Scores	What does this show?
Agility	How quickly you can change direction under control and maintaining speed.	The Illinois agility run test the average is 18-21seconds and I got 18 seconds.	Weakness
Balance	The ability to keep your body mass or centre of mass over a base of support.	The average for the standing stork test is 16-22 seconds and I got 60 seconds.	Strength
Co-ordination	The ability of repeating a pattern or sequence of movements with fluency and accuracy.	The average for the wall throw test is 25-29 throws and I got 18.	Weakness
Power	A combination of strength and speed.	The average for the vertical jump test is 41-50cm and I got 39cm. The average for the standing long jump test is 1.95-1.85m and I got 2.8m	Weakness  Strength
Reaction time	The time it takes for you to initiate and action or a movement.	The average for the ruler drop test is 15.9-20.4cm and I got 6cm.	Strength
Speed	The maximum rate that a person can move over a specific distance or speed.	The average for the 30m sprint test is 4.7-4.8seconds and I got 5.23.	Weakness
Strength	The ability of a muscle to exert energy to move a heavy object.	We did not have the equipment in our school to facilitate testing this component.	
Muscular endurance	The ability of muscles in the body to repeatedly contract or keep going without rest.	The average is 11-20 press ups and I got 10. The average is 15-25 sit ups and I got 17.	Weakness  Weakness
Cardiovascular endurance	The ability to continuously exercise without tiring. Otherwise known as stamina.	Multi- stage beep test- the average is 6.7 and I got 6.8 12 minute cooper run- the average is 16-19 laps of a	Strength.  Strength. <a href="https://www.brianmac.co.uk/gentest.htm">https://www.brianmac.co.uk/gentest.htm</a>

		100m track and I got 18	
Flexibility.	The amount or range of movement that you have around a joint.	The average for the sit and reach test is 7cm- 12cm and I got 54cm	Strength

**ALL DEFINITIONS ARE FROM THE GCSE PE OCRTEXTBOOK.**

### **Agility.**

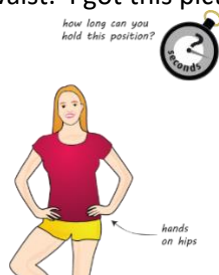
The OCR Cambridge National definition is: Agility is how quickly you can change direction under control and maintaining speed. The test for this component of fitness is the Illinois agility test. In the Illinois agility test, you start led down on your front and when the stopwatch is started, you jump up and sprint around the course set out with cones. I got this picture from [https://www.researchgate.net/figure/Illinois-Agility-Test\\_fig1\\_287208153](https://www.researchgate.net/figure/Illinois-Agility-Test_fig1_287208153).



In this test I got 18 seconds and compared to the average of 18-21seconds, I have average agility. I got this information from <https://www.brianmac.co.uk/illinois.htm>. This shows me that this a bit of a weakness of mine because I am only average and I did a lot better in some of the other components of fitness. I need to improve on my speed of weaving in and out of the cones faster and making myself be more agile to then be able to achieve better scores. In ballet, this is important because you need to be able to perform all of the steps accurately and fluently, but also staying in time and staying to the beat of the music.

### **Balance**

The OCR Cambridge National definition is: Balance is the ability to keep your body mass or centre of mass over a base of support. The test for this component of fitness is the standing stork test. The standing stork test is when you have to stand on one foot for as long as possible with your hands on your waist. I got this picture from <https://www.homefitnesstest.com/tests/balance.htm>

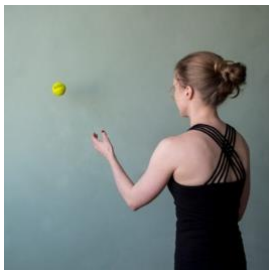




In this test I got 60 seconds and compared to the average of 16-22seconds, I have above average balance. I got this information from <https://www.brianmac.co.uk/storktst.htm> . This shows me that this a strength of mine because I managed to balance for a lot longer than the average for my age group. To improve, I can practice balancing on the ball of my foot to then increase my skill. In ballet, you need to have good balance because when performing pirouettes, you need to be able to balance on the ball of your foot, whilst turning. If you cannot balance, you will fall over or got over on your ankle and possibly get an injury.

### **Co-ordination**

The OCR Cambridge National definition is: Co-ordination is the ability of repeating a pattern or sequence of movements with fluency and accuracy. The test for this component of fitness is the wall throw test. The wall throw test is when you have to stand 2m away from the wall and continuously throw a ball onto the wall and catch it with the same hand. Your other hand must be behind your back. I got this picture from <https://gmb.io/coordination/>



In this test I got 18 and compared to the average of 25-29 throws, I have below average co-ordination. I got this information from <https://www.brianmac.co.uk/handeye.htm> . This shows me that this is a weakness of mine because I couldn't do as many throws at the wall and successfully catch them in the 60 second time limit. To improve, I can practice and look at different techniques to make sure I can use hand eye co-ordination better. In ballet, you could be doing an routine where you are moving quickly and having to use your arms and eyes to see where you are going. You need to be quite spaceually aware and need to be able to move without hitting anything. For example, in a group dance, you have to stick to the formation you are in to prevent the dance looking "messy" or untidy.

### **Power**

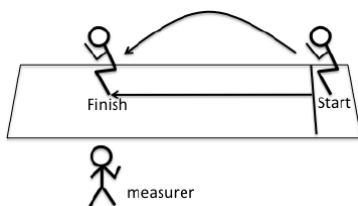
The OCR Cambridge National definition is: Power is a combination of strength and speed. The test for this component of fitness is the vertical jump test and the standing long jump test. The vertical jump test is when you stand against a wall and jump as high as possible up the wall. The standing long jump is when you stand and jump as far as possible along a mat that has measurements on it to



measure how far you have jumped. I got this picture from <https://www.topendsports.com/testing/tests/vertical-jump-runup.htm>



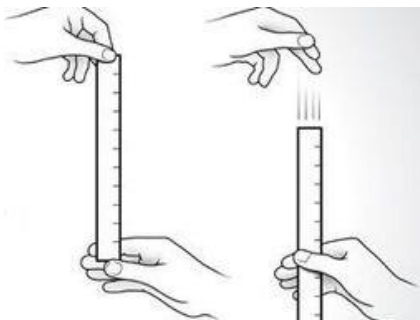
I got this picture from [https://www.researchgate.net/figure/The-standing-broad-jump-test\\_fig4\\_267265295](https://www.researchgate.net/figure/The-standing-broad-jump-test_fig4_267265295)



In the vertical jump test I got 39cm and compared to the average of 41-50cm, I have below average power. I got this information from <https://www.brianmac.co.uk/sgtjump.htm>. In the standing jump test I got 2.8m and the average is 1.85-1.95m and compared to the average, I have above average power. I got this information from <https://www.brianmac.co.uk/sgtjump.htm>. This shows me that this is a strength of mine because even though I was just below average for the vertical jump test, I was way above the average for the standing jump test. To improve, I need to work on my power jumping vertically. In ballet, when doing a “grand jete”, you need to have the power to get up in the air high enough to split your legs and hit a full split before landing.

### **Reaction time.**

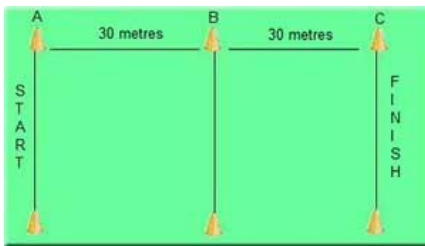
The OCR Cambridge National definition is: Reaction time is the time it takes for you to initiate and action or a movement. The test for this component of fitness is the ruler drop test. In the ruler drop test, a partner holds a ruler above your index finger and thumb, then drops it and you try and catch the ruler as fast as you can. You then record the distance from the end of the ruler to where you caught it. I got this picture from <https://www.tes.com/teaching-resource/new-aqa-biology-gcse-required-practical-revision-7-human-reaction-time-11823857>



In this test I got 6cm and compared to the average of 15.9-20.4, I have above average reaction time. I got this information from <https://www.brianmac.co.uk/rulerdrop.htm> . This shows me that this is a high strength of mine because I am able to react extremely quickly to whatever is happening. I could improve this by making sure I am ready for anything that is thrown at me and making sure I am aware of my surroundings when doing sports. In ballet, when landing from a leap or a jump, you need a good reaction time to make sure you don't fall over when you hit the ground.

### Speed

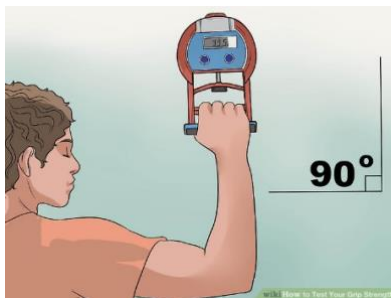
The OCR Cambridge National definition is: Speed is the maximum rate that a person can move over a specific distance or speed. The test for this component of fitness is the 30m sprint test. I got this picture from <https://www.brianmac.co.uk/flying30.htm> .



red to the average of 4.7-4.8 seconds, I have below average <https://www.brianmac.co.uk/flying30.htm> . This shows me that me that I am not a sprinter and my strengths lie in different ove this by working on my speed. I could do this by continuously goal to get a shorter time each attempt. I could work on weight order to increase my speed if necessary. In ballet, speed is needed in order to accurately perform a fast routine with lots of intricate movements. For example, in a quick routine, an arabesque should have the same level of technique as one in a slower routine.

### Strength

The OCR Cambridge National definition is: Strength is the ability of a muscle to exert energy to move a heavy object. The test for this component of fitness is the grip strength dynamometer or the one rep max test. The grip strength dynamometer test is where you squeeze with one hand the dynamometer as hard as you can. I got this image from <https://www.wikihow.com/Test-Your-Grip-Strength>



The one rep max test is when you bench press with one rep as much weight as possible until you cannot bench press anymore. I got this image from <https://www.stack.com/a/calculate-one-rep-max>



Due to unfortunately not having access to the equipment needed to execute these tests in my school, I was not able to test my strength. In ballet, strength would be important because you need to hold yourself in balances with the muscle strength in your legs. For example, an arabesque needs to be held with accurate technique for the amount of time needed within the routine.

### Cardiovascular Endurance

The OCR Cambridge National definition is: Cardiovascular endurance is the ability to continuously exercise without tiring, also referred to as stamina. The test for this component of fitness is the Cooper run or the multistage fitness test. The cooper run is where you continuously run around a 25m by 25m square for 12 minutes and count the number of laps you do.



I got this image from

[http://news.bbc.co.uk/sportacademy/hi/sa/in\\_the\\_gym/features/newsid\\_2143000/2143192.stm](http://news.bbc.co.uk/sportacademy/hi/sa/in_the_gym/features/newsid_2143000/2143192.stm)

the average is 16-19 laps and I got 18 laps. I got this information from

<https://www.brianmac.co.uk/gentest.htm> and it shows I have an average cardiovascular endurance.

The multistage fitness test (also known as the beep test) is when you run between 2 cones that are 20m apart. Each time you run between the cones, you try and make it before the beep. You are considered 'out' if you don't make it to the cone before the beep more than twice. I got this picture from

<https://www.scienceforsport.com/multistage-fitness-beep-test/>



Figure 1. Multistage Fitness Test configuration.

The average is 6.7 and I got 6.8. I got this information from <https://www.brianmac.co.uk/beep.htm> . This shows that cardiovascular endurance is a strength of mine. However, to improve I could do continuous training to help to really build cardiovascular hypertrophy and this would show through my ballet dancing. In ballet, cardiovascular endurance is needed because if you are performing a high intensity, 4 or 5 minute routine, you need endurance to be able to carry on the routine to the same accuracy and fluency all the way through.

### **Muscular Endurance.**

The OCR Cambridge National definition is: the ability of muscles in the body to repeatedly contract or keep going without rest. The test for this component is the press up and the sit up test. These are when you continuously press up or sit up until you can no longer go on. I got this image from <https://www.youtube.com/watch?v=gQfg1pUO0nM> . The average for this test is 15-25 sit ups and I got this information from <https://www.brianmac.co.uk/situptst.htm> . I managed to do 17 sit ups in this test. This is a weakness of mine.



The press up test.



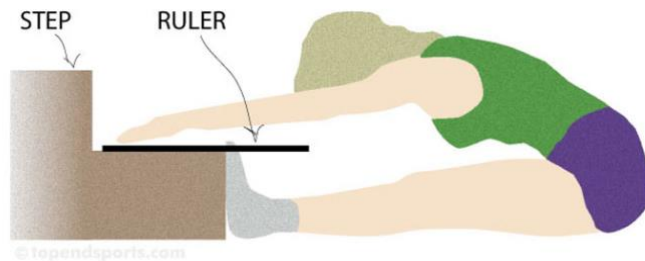
I got this image from <https://www.topendsports.com/testing/tests/push-up.htm> . The average for this test is 11-20 press ups and I got 10. This shows that press ups are a weakness. To improve this I could do some weight training on my Biceps and Triceps to try and build some strength to then be able to perform more press ups. In ballet, muscular endurance is needed because you need to be able to hold balances or stretches for a long time without tiring. For example, you might need to hold a “releve” for a longer period of time whilst doing a “port de bras” with your arms.

### **Flexibility**



The OCR Cambridge National definition is: the amount of range of movement that you have around a joint. The test for this component of fitness is the sit and reach test. The sit and reach test is where you sit against a step with your feet flexed and your legs straight and you then reach with your hands to as far along the ruler as possible. I got this image from

<https://www.topendsports.com/testing/tests/home-sit-and-reach.htm> .



The average for this test is 7-12cm and I got 54cm. this shows that flexibility is a strength of mine. I could improve this by doing static and dynamic stretches to the elongate the muscles in my legs so I gain even more flexibility. In ballet, flexibility is needed to reach full; extension of arms and legs and create full and beautiful lines. Also, it would give you a much higher kick or “devellope”.

### **Analysis**

The 1<sup>st</sup> component of fitness that I think is the most important to my activity is balance. To have balance, you need a good centre line of the body and a steady base. I think that balance is the most important component of fitness in relation to ballet because it allows you to hold yourself in positions and balances on 1 foot. When dancing “en pointe”, you have to balance and use a flat, wood platform essentially to then put all of your body weight on. This requires a lot of balance and the ability to really pull up through your feet and legs to hold yourself properly. When doing an arabesque, it is when a dancer stands on one leg with the other leg extended behind. This needs a lot of balance to make the movement look aesthetic and easy. To look graceful and elegant whilst dancing, you need to fool the audience in to thinking that the movements that you are doing are as easy as they look. It would be hard to do this if you were always falling off your pointe shoes and wobbling in balances such as arabesques.

Also, during a pirouette, you need to have a good sense of special awareness and balance because you are turning on one foot whilst balancing on a small platform of your box on your pointe shoe. Pirouettes are hard enough to teach and do at an early stage of dance and having good balance then allows you to further continue to improve your turns. Balance will help to improve pirouettes because you can then work on how many turns you are doing at one moment in time. In a competition or an examination, the judge or examiner would be more impressed by 4 pirouettes in a row than just a double. Being able to perform 5 or 6 in a row shows a great advance dancer and a good appearance on a stage when you impress the audience. This is why balance is key to ballet and why is it my number 1 most important component of fitness.

The 2<sup>nd</sup> component of fitness that I think is very important to my activity is flexibility. Flexibility allows your overall movements to be flowing and smooth. Flexibility in the Hamstrings and Quadriceps is key because in ballet, you use your legs the most to really show off your flexibility whilst in a routine. In competitions, the judges are more impressed by a high level of flexibility because not only does it show that you train well and stretch regularly, it makes the overall appearance of the dance look so much better and smoother.

Flexibility is also needed because it helps to extend your lines and create a more effortless look. Having a higher “developpe” shows a more advanced dancer and a very established training technique. The muscle strength as well helps for the height of an arabesque or kick. This is in 2<sup>nd</sup> position because balance is more important as, there is no point having amazing flexibility if you are falling over everywhere because you have no balance. But, then flexibility does come in a close 2<sup>nd</sup> position because it works well with your balance to create an overall look of the legs in leaps and balances.

A straight leap requires a full split in the air. Just being able to do the splits will not create the same image in the air due to gravity pulling your legs down for the split position. Due to this, you have to be able to do an over split, which is over a 180 degree angle. In order to achieve this, you would have to do stretches every day and keep it up. Doing this consistently would help you to achieve the over split needed. You would need to overload the stretching in order to achieve your full flexibility potential but, you would have to make sure that injury does not occur because if a ballet dancer gets an injury, depending on how serious it is, it can result in an end of their career in ballet.

The 3<sup>rd</sup> component of fitness that I think is important to my activity is cardiovascular endurance. In some ballet performances such as the nutcracker and swan lake, they are very long performances with high intensity routines and sequences; especially if you are a “prima ballerina” then you are on stage most of the production. However, in any ballet class or production you need to maintain accuracy and fluency all the way through without tiring.

Cardiovascular endurance is needed because in order to carry on, you need to have stamina. If you are taking part in a 4 or 5 minute dance of high intensity, whether you are the lead or not, it is very highly demanding on your cardiovascular system. Blood has to get around the body quickly because you are constantly moving and performing. Furthermore, you have to keep the energy levels up because the dance should look as effortless at the end as the beginning. If you do not have any cardiovascular endurance, then your performance will take a massive drop in aesthetic pleasing g because it will look droopy and clumsy as you get tired. During a production such as the Nutcracker or Alice’s Adventures in Wonderland, they are much loved productions and the audience who come to see them want to see a clean, beautiful ballet. If you are so tired that you can no longer dance, your dancing will ultimately look bad.

To improve cardiovascular endurance you can do continuous training. Continuous training would get your body used to the high demands of a major production and improve over time, your cardiac hypertrophy. This would seriously benefit you as a ballet dancer because it would make you look very professional on stage and above all, make you feel better whilst dancing. Ballerinas are meant to look graceful and elegant and this is why cardiovascular endurance is so important and is 3<sup>rd</sup> in ranking of the importance of the 10 components of fitness to my activity.

The 4<sup>th</sup> component of fitness that I think is next in the ranking of importance is muscular endurance. Muscular endurance is similar to cardiovascular endurance because they are both about carrying on without tiring. Muscular endurance is needed in ballet because you need to be able to hold positions with muscle strength. When performing any sort of balance like an arabesque or a “releve” without having muscular endurance in especially your legs, you would just fall over and could not carry on. An arabesque is when a dancer stands on one foot with the other leg extended behind. This can be a lower arabesque at 45 degrees or a higher arabesque at 120 degrees. This position no matter how or low however, has to be held with strength and accuracy. Sometimes in productions, dancers have to hold these positions for 2 or 3 minutes whilst the “prima ballerina” is dancing. This is where the

muscular endurance comes in. If you are wobbling about the stage the audience will not be impressed and it would make the production look sloppy or messy.

Also, positions like pirouettes would need muscular endurance because when you are doing continuous “fouetté” turns, like in the “Kitri” variation from Don Quixote, you have to pull up in your leg using the antagonistic pairs (Hamstrings and Quadriceps) and really tense the muscles in order to stay on your pointe shoe whilst turning. Your antagonistic pairs in your upper arms (Biceps and Triceps) are also needed to hold your upper body position tall and straight. If you have only 1 wobble, you would fall off your shoe immediately and fall onto the floor. This is why muscular endurance is so important in ballet and why it is the 4<sup>th</sup> component of fitness ranked out of the 10 components of fitness.

The 5<sup>th</sup> component of fitness that I think is next in the ranking of all 10 components of fitness is co-ordination. Co-ordination is needed in ballet because more often than not, you have to use both your legs and arms at exactly the same time. Whether it is in “balances” or “pas de bourrés” legs and arms have to work together simultaneously to create the effortless, beautiful movement that ballet portrays. In any sequence or routine, the arms and legs have to work together. Every single movement would have a completely different arm to the leg movement and it does make life a little harder than usual as a ballet dancer. You have to think about which angle exactly your head should be at and where your right leg should be opposed to your left; which arm is where and if they need to create momentum for you.

However, this ultimately creates the whole illusion of the ballerinas being effortless and graceful. To improve your co-ordination, you could try a circuit training. At each station you could try a different type of co-ordination such as the wall throw test. For ballet, you could practice your “pas de bourrés” or your “fouetté turns” just practicing getting the momentum and getting the whole skill tighter and cleaner. Co-ordination is important for ballet but not as important as balance, flexibility, cardiovascular endurance or muscular endurance because you have to have all of those things for you to be able to then work on your co-ordination. This is why it is 5<sup>th</sup> on the ranking of the 10 components of fitness relative to my activity.

The 6<sup>th</sup> component that I think is the next important to my activity is agility. I think this is important to ballet because sometimes the stage can be very big for a performance and if you are in a solo you might need to move about the stage quickly and in different directions. Maintaining speed across the stage on pointe is important because it also allows you to stay balanced on your pointe shoes. Changing direction whilst maintaining speed is important because in ballet, when doing a fast intricate routine, you will need to move fast with accuracy and fluency. You need to keep up with the music because every beat will have a specific movement that is attached. If you miss one beat then all of the movements following that missed beat will be so out of time. Also, this applies if you are in a group dance even more. If you are behind the music then you will either look seriously out of place or even worse, throw other dancers off that are behind you. This will impact the audience because the whole routine will look messy and then have an impact on the aesthetic of the whole performance.

However, agility is lower down on the list of ranked importance of the components of fitness because other components like balance are more important to my activity. Balance is almost the basic step that you can then build on with the other components of fitness. If you are falling off your pointe shoes, then it doesn't matter what agility you have because you won't be able to carry on anyway. Without balance, having the agility needed to execute a high demand, fast dance will be

way too advanced for that specific dancer. This is why it is ranked 6<sup>th</sup> on the list of importance of the 10 components of fitness.

The 7<sup>th</sup> component of fitness that I think is next important in the ranking of all 10 components is strength. Strength is important to ballet because for a solo performance, you might need to really hold yourself up into a movement to execute it properly. A “ponche” requires a lot of strength in your legs and mostly your ankles to be able to get the height needed for the advancement of the movement. When you are a younger dancer, the strength in your ankles is important because if you have no strength in your ankles, as soon as you step onto pointe, your ankles will give way and you could end up with a very serious injury. However, strength is further down the list of importance out of all 10 components of fitness because for a solo performance, no lifting of other dancers is required. This means you don’t need physical strength in your Biceps or Triceps. Strength is no way near as important as most of the other components of fitness and this is why it is 7<sup>th</sup> on the ranking scale of importance for all 10 components of fitness relative to my activity.

The 8<sup>th</sup> component of fitness that I think is important in the ranking of all 10 components of fitness is power. Having good power can be very helpful whilst performing a ballet routine. When you are performing a movement such as a leap or jump, you need enough power to be able to spring in to the air with enough height to then get your legs in the correct position. When performing a straight leap, you need enough power to be able to jump high enough off the floor. Then, using the momentum, you need to scissor your legs in to a full split in the air (caused by having enough flexibility in your over split). However, this is the only circumstance that you would probably need power and this is really not too important in the grand scheme of ballet dancing for a female. For a male dance, power would be one of the 1<sup>st</sup> in the ranking of components of fitness because they jump a lot. Most of the routine for a male ballerina is to jump in the air and perform massive lifts with your female partner. For females on the other hand it is not too important so this is why power is 8<sup>th</sup> on the ranking of all 10 components of fitness instead of higher up.

The 9<sup>th</sup> component of fitness that I think is the next important to my activity out of all 10 components is speed. Speed is important because when performing a routine “en pointe” you would have to have speed to stay in time with the music. Having speed on the stage is also important because it is easier to race across the stage with the momentum needed to get onto your pointe shoes in tricky movements such as arabesques or “fouetté turns”. If you are really slow, then you could fall off your shoes because you would have lost the momentum needed to then go onto the next movement smoothly. This could also cause you a very serious injury and then end your career as a ballet dancer. However speed is so low down on the list of importance for all 10 components of fitness because that is all you really need speed for. Sometimes you don’t need to race around the stage and it is about more meaningful movements. If you have choreographed your own show or routine, then there must be some emotion or feelings behind the movements. This is sometimes way more important in ballet so this is why speed is so low down on the ranking of importance out of all 10 components of fitness for my activity.

Finally the 10<sup>th</sup> component of fitness on the ranking of importance relevant to my activity is reaction time. Reaction time I don’t think is that important at all in relation to ballet. Yes you do have to have to react to music but, that is more co-ordination because you are doing multiple things at once. In a group routine, if you are doing partner work then you do have to react to your partner in a way because you have to be aware of what they are doing in relation to you. In a big group routine, you would have to have special awareness of everybody else of the stage at that moment in time and if something went wrong you would have to react to that issue appropriately. However, I don’t think reaction time is that important in ballet because all of the other 9 components are a lot more



relevant to the skill. This is why it is the last in the ranking of importance of all 10 components of fitness in relation to my skill; ballet.

### **Overview**

In ballet the core skills and advanced skills are Pirouettes, Leaps and Balances.

#### **Pirouettes**

In ballet, pirouettes are very important to a routine or sequence because they allow a different type of movement. Also, they usually impress the audience because they are exciting and look difficult. In French, a pirouette means to whirl and they usually occur from a “degage” into 4<sup>th</sup> position. Pirouettes show a level of skill that is advanced. It requires balance and power to execute accurately. When performing a pirouette, your supporting foot should be turned out and you should also have all of your weight on your supporting leg. Your feet should be in 4<sup>th</sup> position for an easier allowance of momentum and balance. When you are steadily in 4<sup>th</sup> and your weight is on your supporting leg, your arms should then be in 3<sup>rd</sup> position with your front arm being opposite to your front leg. You should then snatch up on a “releve” and pull your back leg up into a “retire” to the front of your knee. Make sure this is also turned out and then perform a single turn. To land an accurate pirouette, you should drop back in to 4<sup>th</sup> position and steady your balance. To make this an advanced skill, you could try and attempt a double or triple pirouette. This requires a lot more balance and co-ordination because you need to keep steady on either pointe shoe or the ball of your foot for much longer. Staying up and accurate in a triple pirouette is very advanced and is only typically achieved with years of training. Your posture and placement is important in pirouettes because you have to pull up in your core to be balanced in your rotation. The alignment of your body also links in to this because your shoulders need to be in the centre line of the body and this will also be your posture within your turn. Having this will therefore improve all areas of dance because you will look polished and have clean movements. When performing a pirouette, you need to have tension in your core and your legs to sustain the rigid structure needed to keep your balance whilst in the movement. You need to make sure you have enough space because hitting somebody else or a piece of equipment could cause an injury or just mess up your movement.

Also, what makes pirouettes an advanced skill is if you are wearing pointe shoes. When wearing pointe shoes, a pirouette becomes so much harder because you only have a very small platform to balance and turn on. You need proper momentum when trying to do a pirouette on a pointe shoe because you might not get all of the way round your turn or even your double turn. You should go from the same position as if you were in soft block shoes or slippers. You should go from 4<sup>th</sup> position or 5<sup>th</sup> position to make it harder. Your arms should be in 3<sup>rd</sup> position and your weight should be on your front foot. What makes pirouettes harder in pointe shoes is the fact that you need to really pull up in to your leg if you don't want to go over on your ankle and risk a serious injury. When you go onto a "releve" ready to then turn. Your arms should snatch into 1<sup>st</sup> position to help with the momentum to get round the single, double or triple turn. You have to have strong ankles in order to execute a pirouette on point accurately because you have to put all of your body weight balanced on that one ankle. If they are not strong enough your ankle will just collapse and you will fall. You have to believe in yourself and really commit to the turn before you do it because otherwise you will panic and also fall. The speed and energy of a pirouette are important because when you are on pointe, you have to have the momentum to be then able to complete the single or double turns you are aiming for successfully. However, you have to make sure that your pirouette matches the rhythm of the music to keep in time and also to maintain the slick polished performance.

### **Leaps**

In ballet, leaps are really important to a routine or sequence because they give a variety in level of height. Going from a low position like a "pas de bras" to a straight leap gives a sense of grace and elegance. It shows the audience a variety in strength. When performing a straight leap in a core skill, you should make sure you have a proper preparation. A step ball change is perfect because it creates the momentum needed to spring up into the leap. Your arms should be in a 1<sup>st</sup> arabesque position but with your shoulders down and your head slightly raised. Your leap doesn't have to be a perfect 180 degree split in the air for a core skill but then should be executed accurately and should be landed cleanly. When landing from a leap, you should land on a "plie" and this will help to not damage your knees. Posture and placement are important during a leap because you have to have a correctly placed starting foot to then give you the best height possible during the leap. If you have bad posture and you are slouching during the leap, it could therefore throw you off balance and then cause an injury. Keeping your posture good makes sure that you look aesthetically pleasing, as well as executing the leap to the best of your ability. Alignment is important because you have to make sure all of your body is in the correct placing and all in line with each other. This will create the "effortless" look and also make it easier for you. If you are trying to realign your body in mid-air whilst doing the leap, it will cause you to struggle to execute it well. It is much easier for you to make sure your alignment is good before you start the leap. When in the air, you have to use the tension in your legs to hold the position for as long as needed for the movement. This will keep you in time to the music and show your level of flight and spacing during the routine. You need to have the spacing exactly correct to be in time and also in the correct place on the stage to carry on to other movements after that.

For an advanced skill, you could try a 2 run preparation as it is harder to gain momentum and in the actual leap itself, you should be hitting a full 180 degree split in the air. To help with this you could try exercises to help with your flexibility and elevation. Your arms should again be in either 1<sup>st</sup> or 2<sup>nd</sup> arabesque and your landing should be clean and maybe follow through into another movement such as "pas de bourre" or a "balance". When wearing pointe shoes, leaps become more difficult. If you have pointe shoes on, it affects the preparation of the leap and the leap itself in different way. In the preparation of the leap, having pointe shoes on will make it more difficult because they might not allow you to build momentum like in soft blocks or slippers. They are way stiffer and therefore make

it harder to go on to demi pointe to step ball change or do 2 runs for your preparation. In the leap itself, pointe shoes make it harder because you have to work harder to be able to pointe your feet in your leap. You have to pointe your feet to make the leap look advanced and technically correct but, wearing pointe shoes does make it harder because they have a shank at the bottom of the shoe. When you land the leap, pointe shoes make it more difficult because you have to know how much to bend your foot in order not to accidentally go onto pointe when landing or not to slip. If you land on the wrong angle of your shoe, it could cause you to slip and therefore fall and potentially cause a serious injury. Furthermore, you could accidentally go onto pointe when landing. This would be bad because you need to bend your knees when landing from a leap in order to avoid a knee injury. However, if you land on the box of your pointe shoe, you won't be able to bend your knee because if you do, you will lose balance and fall over. So, instead you keep your leg straight and this could cause cartilage damage or even a dislocation. Speed and energy are important because they make sure that you get the height needed off the floor to get the correct position in the air. Being original is important also because no one dancer is the same. We all have different bodies and a different way of moving. Making the leap specific to you and original will not only impress an examiner or judge, it will make it so much easier for you to execute.

### **Balances**

Balances are also a major part of ballet. Sometimes, you can be running around the stage doing very high intensity movement and then a balance is a breather to catch your breath. A balance could be an arabesque or a "releve" and can vary from basic top extremely advanced. In a core skill, if you were doing an arabesque, it could be at a 45 degree angle and doesn't have to be that high. You should step into it on a flat foot and then lift your leg to the back. You should make sure that your hip is down and also that your hips are square to the direction you are facing. Your shoulders should be down and strong, holding your arms up. To make this then an advanced skill in ballet, you could turn your arabesque in to a "ponche". This is when you are still on a flat foot, but your leg is above 90 degrees and your body has tilted down towards your leg. You should be aiming for a vertical split in the air but unless you have a very advanced over split, this is not possible. Your feet should always be pointed and all of your leg should be in tension in to a straight position. This is important because the more tension you have, the more rigid you are and the less likely you are to then fall over or go off balance. Posture and placement are important during balances to prevent a messy balance or falling over. You have to place your supporting foot well and turned out to give you the base for your balance. You need to line up your body into straight or curved lines and keep your body in that position to then balance. Alignment will help to balance because all of your muscles and joints are in the correct place to then stay there for however long you need to hold the position.

Wearing pointe shoes would make balances even more advanced and definitely more challenging because of your balance. You are trying to balance on a small platform which your whole body weight is pushing on. If your balance is an arabesque, you are on one foot with the other foot raised off the floor at least at a 90 degree angle. This could cause you to wobble off balance and therefore ruin a sequence or routine. You need to make sure that when wearing pointe shoes, you pull up through your leg and then use your upper body to hold yourself in that balance for as long as you need to. Speed is not too important in a balance because you need to slow down before you actually step in to the balance to lower your momentum and energy. This is because you want to tense all your muscles in a rigid position for as long as needed and not to speed in to it. Rhythm is important because you have to know when in the music to recover from a balance and carry on with the rest of the routine.

### **Choreography of routine.**

Within a choreographed ballet piece there should be lots of different elements. Repetition of movements is needed because it ties all of the other movements together. If you create a sort of “chorus” with movements that is repeated a few different times in the routine, the audience will start to connect with the dance more instead of just looking at the amount of different steps you are putting in; in no specific order. In doing this, you are then creating a theme to the ballet dance and hopefully a story. Variation is key with the movements performed because if you are doing the same things over and over, it can get boring for the audience but also can limit your ability in the eyes of the examiner. It is important to show all of the movements you are capable of, showing the examiner or judge your level of core and advanced skills and what you can really do. A climax can happen in a ballet dance, where you reach an exciting jam packed part of the routine. This usually when you show the harder movements that you can do and you impress the examiner or judge. It complicates the routine to an extent and gives another sense of a theme or storyline to your piece.

### **Technique of movements.**

As well as the emotional and themed side of the ballet dance or routine, you have to have the clean technique to then show your level of accuracy and knowledge of the sport. Having the correct technique like pointed toes, straight legs in leaps, soft arms in places, correct hand placement and turned out legs will be aesthetically pleasing to the audience and the examiner or judge. Being aesthetically pleasing means that you look good on stage. Looking aesthetic on stage is one of the main priorities as a ballet dancer and performer. The technique of your movements is how you achieve this and it all relies on the factors listed above. Having turned out feet is the first thing that you get taught in ballet and it is such a major factor in not causing injury and looking aesthetic on stage because it is what all of the ballet movements are built on. They are made to have turned out feet so therefore look bad without turned out feet. Having the correct technique will also be a factor in whether you can balance or not. When you have badly executed technique in ballet, you won't be able to balance because your knees will be aligned wrong and it will just hurt. If a movement hurts in ballet you are often doing it wrong. If you keep doing this it could result in a long term injury or bad habits. This can be fixed by learning the correct technique or controlling your body shape in the ballet routine. Controlling your body shape is important because it links in with everything else like balance and alignment. By controlling your body shape either in the air or on the ground, you will therefore make movements cleaner and more rigid.

### **Decision making**

Decision making is important in ballet because when you are choreographing a ballet routine, you have to make a decision about what movements to include that will then fit to the movements well and make sure that you can complete all of these movements with fluency and accuracy. The routine should be difficult but, should not be beyond your capabilities. In ballet it is important to push yourself to get better however, if you push yourself too hard in the difficulty of the routine, you could get an injury. The difficulty of the routine does not always factor in to the difficulty. The difficulty could be how many steps you are putting in. also, it could be how fast the music is and you then have to decide how many steps to fit in to the music choice. However, the choreography is important. Before choreographing a ballet routine, you have to decide what you want the story of the piece to be. Then create an arrangement of steps that will portray that storyline to the audience.



The use of flight and leaps is important in a routine because you have to decide the different levels of height in the routine. Having you kneeling on one knee or 2 knees and then some movements stood up and then some leaps; gives the routine a sense of different levels and excitement. The decision making of speed is also very crucial. You have to decide when to have slow and then faster movements to give the routine excitement and originality.

When at a competition, you should show showmanship to impress judges. You have to decide when this is appropriate and how to do it in the correct way. Including impressive things is important but it can be overwhelming and take away from the main source of ballet dancing. When you get your score from a competition, you can use this to then decide what to change in your routine to make it better and therefore get you a higher place or score at the next competition. This is important because you are then more aware of your strengths and weaknesses and when to take in to consideration other dancers around you that could have got a lower score. Having sportsmanship is a decision that is yours to make but is crucial for your appearance at a competition. You should portray a gracious character and be careful of what you say and do around other dancers. This shows respect and consideration.

## **Assessment**

### **Weaknesses**

#### **Lifted arabesque**

At the beginning of the dance, I performed lifted arabesque in 1<sup>st</sup> arabesque arms. I step forward and hop and I lift my leg in to an arabesque position with matching arms. The component of fitness linked to this movement would be co-ordination because my legs and arms are moving at the same time, as well as hopping. In ballet lifted positions such as this are important because they give dimension and fluency to the dance. In ballet, lots of the steps are performed on the ground with no movement off the floor at all. So, having a lifted position with a hop in a dance, would make it more aesthetic to look at and sometimes, make the dance easier to remember for the dancer. If there is lots of positions and movement on the ground with no elevation, they could all get scrambled together in your head, so putting a slightly elevated step in a routine, breaks down the other steps in to sections. I believe that this step is a weakness of mine because when I step into this movement and perform it, my leg is slightly bent and isn't very high off the ground. My leg lifts to around a 90 degree angle which would push into an advanced skill but I just feel like I could push myself for that leg to be higher. My leg is also just slightly bent which also indicated this is a weakness because legs should almost always be straight in an arabesque unless it is on "fondu". Having my leg slightly bent also, shows that more training is needed to really polish all of my steps to look professional and accurate. My weakness in muscular endurance is shown here because I am getting tired toward the end of the routine and the lifted arabesque at the end wasn't to the standard that I need it to be at. It shows I have a weakness in muscular endurance and that this needs improving.

#### **"Pose" Steps.**

Around the middle of the dance, I perform 2 “Pose” steps before 2 “pose” turns. I am going to the right diagonal back corner and as I step with my back leg towards the corner, my front leg draws up into a “retire” to the back of my knee on my back leg. My arms are in a low 3<sup>rd</sup> position and my head is tilted the opposite way to the way I am traveling. The component of fitness that this links to is flexibility because I need to turn my front leg out into a 180 degree angle in order for this movement to be technically correct. Flexibility does apply to hips as well, so being flexible in your hips would seriously help with this movement. “Pose” steps are important to ballet because they give a dancer to breathe before or after a high intensity turn sequence or elevation sequence. These are a good way to prepare yourself for a sequence of turning and to catch your breath. You still look so elegant and beautiful, but it is such a simple looking step. However, I do find this a weakness of mine. This is because my leg isn’t too turned out. In this step on the video, you can see that my leg isn’t completely turned out and definitely is not at a 180 degree angle. This is important because it then shows a level of flexibility that does not match the level of dance and steps. My flexibility should be much higher than it is and then my turnout would increase in result of this. My flexibility is the weakness that I would like to improve the most because it is a major factor not just in ballet, but in all other types of dance.

### **“Assamble soutenu”**

Towards the very end of the dance, I perform an “assamble soutenu” turning to finish in a “chasse”. I am facing the front and I bend my right knee and point my left leg in front. My arms are in a love “pas de bra” and I then snatch my feet together in to a turn ready to finish the dance. The component of fitness relevant to this movement is co-ordination because I have to move my legs and my arms in to a preparation and then snatch both of them up in to 5<sup>th</sup> position to then turn on the balls of my feet in to a “chasse”. I have to try and use both my arms and legs to get momentum to turn and they both have a specific position to be in otherwise it looks messy and unprofessional. After watching the video, I have decided that this movement and component of fitness is a weakness of mine because it does look messy to an extent. The movement of me doing an “assamble soutenu” does show a lack of co-ordination because my legs and arms don’t work together in this situation. My arms go up to 5<sup>th</sup> position at a different time to my feet and it looks out of place. Also, when I lean forwards to then snatch up to 5<sup>th</sup> position, my back is arched instead of straight and therefore my shoulders are raised. This is an advanced skill because it requires lots of different skills put together to then allow you to execute an “assamble soutenu” correctly. This movement is important to me because in my choreography, it is an asset to include in certain sequences. In a piece of choreography, an “assamble soutenu” is good because it shows both your arms and legs are being used and to an examiner it can be quite impressive to include. To get the right angle especially on pointe shoes is important because you need to have the correct balance in order to accurately achieve this movement. You can’t fall off your shoes but, it is extremely hard to use your arms in a completely different place to your legs which could ultimately throw you off balance.

### **Strengths**

#### **“Pas De Boure Piques”**

Around the middle of the dance, I perform a sequence of “pas de bourre piques”. I am facing the front with my arms out to second and my head tilted upwards slightly. The components of fitness that I think are relevant to this step are speed and balance. Speed applies to this step because the sequence is quite fast. I have to move my feet very fast in order to successfully complete the sequence in time to the music. Balance applies to the step sequence because I have to stay in

balance in order to then carry on with the rest of the steps because the music is fast. I have to be accurate with my balance because if I miss a step out, it will throw the whole dance and make things look out of place. This is an advanced skill and I do feel like I executed them very well. They are important to ballet because they show correct technique and footwork. Different steps can hide your technique flaws with flash movements but “pas de bourre piques” show everything from your turnout to your musicality. My turnout on the video I thought was quite good and also I got the whole sequence in without getting behind the music. I completed them with fluency and accuracy and my whole upper body stood tall and still.

### **Pose turns**

Near to the end of the dance, I complete 2 pose turns. A pose turn is an advanced skill and requires a lot of thought and co-ordination. I am facing the right diagonal front corner. The components of fitness that I think are relevant to this movement is balance and co-ordination. In a pose turn you should start in 5<sup>th</sup> position and just before you begin, you should stretch your front leg out in front of you on “fondu”. In the preparation. Your arms should be in a steady 3<sup>rd</sup> position and your foot should be pointed. In the turning position, your turning foot should be on “releve” and your back leg should be in “retire” to the back of your turning leg. Your arms should snatch from 2<sup>nd</sup> position to 3<sup>rd</sup> position to then give you the momentum needed to turn. When landing your turn, your back leg should draw back down your leg from “retire” to a snatched 5<sup>th</sup> position on the floor also on “releve”. Then your front leg should stretch back out in front of your body. On the video I showed all of these steps accurately and this is why I think it is a strength of mine. My head is spotted in each turn and my back is straight. My landing from each turn is clean and looks accurate. When in the turn, my leg that is in “Retire” is fully turned out and is up and at the back of my knee. In a piece of choreography, pose turns are important because they make the audience impressed that you can travel across the stage whilst turning. In a famous piece of choreography “the sugar plum fairy” from the nutcracker, she does pose turns all around the stage for at least 30 seconds. This is impressive to the audience and very hard to execute properly. This is because it is very easy to get dizzy and spotting is key. Also, you have to think about your technique and placement as well which adds to the difficulty.

### **Chasse**

At the very end of the dance, I perform a chasse out of an “assemble soutenu” to finish the routine. In French, a chasse means to chase and it is like you are chasing somebody across the stage. You start a chasse usually after an upwards movement such as a “releve” or an arabesque. A chasse starts when you “plie” and in 5<sup>th</sup> position with your feet. You then push forward maintaining your “plie” position and then put your weight on your front leg to stretch up into a certain position. Chasses are useful in ballet because they can change the position of your feet in a fluent movement so you can then move on to the next step. A chasse would be considered as a core skill but, in a piece of choreography are very important. This is because they can join big movements together and make it look like everything flows nicely. A chasse can also change the position of a dancer so in a

group dance these would be helpful because they would then make sure that everybody is in the right place and everything works.

### **Movement Analysis**

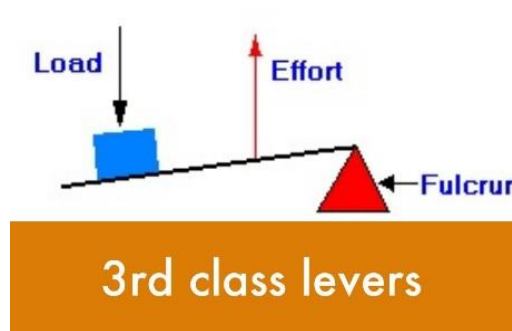
The skill that I have chosen from my activity to use in the movement analysis is a “plie”. The joints that are used in this movement are the: ankle, knee and hip joints. These joints are all either hinge or ball and socket joints and they all need to be strong in order for this movement to happen. The ankle joints and knee joints are hinge joints and your hip is a ball and socket joint. At the ankle joint, the tarsals and the tibia and fibular articulate to create the joint. At the knee joint, the articulating bones are the tibia and femur with the patella for the knee cap. At the hip joint, the articulating joints are the pelvis and the femur. At these joints, flexion and extension occurs because you have to bend and straighten of your knees and ankles to perform a “plie”. When you recover from the “plie”, you then extend in the joints and muscles to straighten your legs again.

Different muscles have different functions. The main muscles needed in a “plie” are the Gastrocnemius, Hamstrings, Quadriceps, Abdominals, and the Gluteals. The Gastrocnemius is located at the back of the lower leg and the function is to bend the knee and extend the ankle. This is needed in a “plie” because you need to flex at your knees to bend in to the movement. The Hamstring is located at the back of the upper leg and the function is to cause flexion at the knee. In a “plie” this is needed because again you have to bend your knees out to the side of your body to perform the movement correctly. The Quadriceps are located at the front of the upper leg and the function is to cause extension at the knee. This is needed in a “plie” because you have to recover out of the bend in to an extension at the knee to stand up again. The Gluteals are located in the buttock and the function is extension at the hip joint and abduct and rotate the thigh outwards. This is needed in a “plie” because you have to have your knees at a 180 degree angle out to the side of your body to be accurate in the movement. The abdominals are located in the core of the body and the function is to allow the body to bend forwards or backwards at the hip joint. You would need

abdominals in a “plie because you would have to keep your back up straight and tense your core for strength.

The muscles used in this movement are the gastrocnemius and the antagonistic pair, Hamstrings and Quadriceps. When your legs are in flexion, the Hamstrings are the agonists because they contract and the Quadriceps are the antagonists because they relax. The Gluteal is the fixator and the abdominals are the synergists. In an antagonistic pair, the muscles work together to create movement. The Hamstrings allow flexion in the knee joint which is a hinge joint, and the flexibility of the Hamstring affects the depth of the “plie”. The deeper the “plie” the better and it will be more impressive to an examiner or a judge at a competition. The Quadriceps allow the extension at the knee joint also when recovering from a “plie”. If you have flexible Quadriceps, you will then be able to recover from the movement more easily and then be able to move on to the next movement fluently.

A “plie” would be a 3<sup>rd</sup> class lever, a third class lever includes the load, effort, fulcrum and the lever arm. <https://infograph.venngage.com/p/79483/levers>



In this diagram, it shows the lever that is the flexion position in a “plie”. The effort is between the load and the fulcrum. The load would be the weight of your body, the effort would be the hamstring, the fulcrum would be the knee joint and the lever arm would be the femur.

The planes of movement also apply to the movement of a “plie”. The movement of a “plie” would go through the frontal plane of movement. The frontal plane of movement splits the body in to front and back sections vertically and adduction and abduction occur in this plane of movement. A “plie” would pass through this plane because in a “plie”, your legs to flex and extend but, your legs go out to the side. Your back is up straight and your legs should be at a 180 degree angle if you have the correct flexibility.

### The Environmental Continuum

The environmental continuum helps to classify how open or closed a movement is. An open skill is when the skill is affected by the environment and requires the performer to make perceptual decisions. A closed skill is when a skill is not affected by the environment. This can also apply to opponents and the weather. A closed skill would be inside and without an opponent. An open skill would be outside when the wind or rain could affect the direction of a skill.



A “plie” would be closed on the environmental continuum because dance is usually an activity that is performed indoors. A “plie” would usually be performed as a warm up at the “barre” or in the centre as part of a routine or a preparation into another movement. It is not affected by the weather and is not affected by an opponent as I am doing this as an individual sport. An example of an open skill in ballet would be if you were outside on a stage in the wind on pointe shoes. This would be open

because you can be effected by the weather on your shoes and that you would have to then make perceptual decisions on your performance.

### **The Difficulty Continuum**

The difficulty continuum helps to classify how simple or complex a skill or movement is. A simple skill is a straight forwards skill with hardly any judgement and is taught as a whole in a repetitive way. A complex skill is when there are lots of decisions to be made and also a complex skill has to be learnt in stages. Usually, a complex skill is an advanced skill on the OCR specification, but a more advanced skill and has to be learnt in steps to be able to achieve it.



A “plie” would be nearer to the simple end of the difficulty continuum because it is one of the first steps you learn in ballet. When you are in the first grade or your first class of ballet, a “plie” is one of the first things that you learn how to do because it is a building block to everything else in the discipline. The use of a “plie” is used in all sorts of ballet movements and is also how you prevent injury whilst ballet dancing. Furthermore, “plies” make your ballet routine look more fluent and smooth because you can then transition between different more complex movements. A “plie” is not a complex movement because it is so easy to master and it is very straight forwards. It is taught in a very repetitive way to beginners in ballet to then build different movements on this skill. An example of a complex skill in ballet would be a “pas de bourre pique”. This is because there are lots of things you would have to learn in steps to be able to complete this movement. For this skill you would need to make lots of decisions about where your feet would land on the stage or floor and also, where your arms should be in relevance to your feet.



## **Action Plan**

In my action plan, I will be improving the muscular endurance component of fitness. The OCR Cambridge National definition is: the ability of muscles in the body to repeatedly contract or keep going without rest. Muscular endurance helps to maintain the level of accuracy needed in order to successfully complete a ballet routine throughout. Muscular endurance is important in ballet because you need to be able to hold balances or stretches for a long time without tiring. In ballet, you need to be able to hold positions sometimes for a long time while other dancers dance. Muscular endurance is majorly important for this because without it, your muscles will get tired and no longer be able to carry on. When you are on pointe, you need to be able to last a whole routine because if you fall off your shoes it is really noticeable and will ultimately make the routine messy and unprofessional. When you are on pointe shoes, you have to be able to then pull up through your shoes with your gastrocnemius all the time when you are dancing to then maintain your accuracy whilst on pointe and make sure you successfully execute the routine with fluency. My personal examples of my weakness in muscular endurance would be towards the end of the routine, I get tired and my lifted arabesques and balances get lower and my legs start to bend. This shows a lack in muscular endurance in my legs and then makes my performance messy and untidy.

### **SMART Goal Setting**

SMART Goal setting is key to improving any component of fitness or skill. The S in SMART stands for specific. This means you have to set a particular target and know exactly what the end goal is. In ballet, I would like to improve my muscular endurance and I would like to be able to hold an arabesque position for 2 minutes whilst changing arms in to 3<sup>rd</sup> arabesque arms and 1<sup>st</sup> arabesque arms. The M in SMART stands for measurable. This is when you have to assess the progress on the goal or when it has been achieved. It is important for monitoring and keeps a performer accountable. I would like to reach 30 seconds with a 45 degree arabesque in week 1-2. In weeks 3-4 I would like to have a 90 degree arabesque and hold it for 50 seconds also. In weeks 3-4 I would like to have a 90 degree arabesque but hold it for 1 minute 30 seconds. In weeks 5-6 I would like to have a 90 degree arabesque with 1<sup>st</sup> arabesque arms and hold it for the full 2 minutes. This way, it would increase my muscular endurance but still keep motivations high because I can monitor myself.

The A in SMART is achievable. This means the goal has to be possible to do and all goals need to be set within the capabilities of the performer. I would like to reach a 90 degree arabesque and hold it for 2 minutes after a 6 week action plan of muscular endurance training. This is achievable because it is not too far off what I am achieving now and I can see myself achieving this goal. I know exactly

what 9i can do to get this and I am highly motivated. I am motivated because I know that if I reach this goal, I can then achieve higher marks in competitions and exams because it shows I have more advanced skills within ballet.

The R in SMART stands for recorded. This is crucial for monitoring and once achieved, can be deleted or checked off therefore, improving motivation. I would time myself holding 90 degree arabesque and record all of my progress and the difference in the height of my leg on a bar chart every day. This will help me to see progression and I can then compare the data and see where I've improved. This will therefore increase my motivation and make me believe in myself that I can do it. The T in SMART stands for timed. This splits the goal in to realistic time frames. Short term target result in long term goals. Being planned and progressive makes your goal effective. I would say that after 6 weeks of muscular endurance training I want to hold a 90 degree arabesque for 2 minutes.

### **Practice 1**

For my first practice, I am going to do a circuit training. I will do this 4 times a week for all 6 weeks. Each week I will lengthen the working time and shorten the recovery time.

- Week 1-2= 45 second working time, 10 second recovery
- Week 3-4= 50 second working time, 8 second recovery
- Week 5-6= 1 minute working time, 5 second recovery.

My circuit will be working on my muscular endurance in my legs because in order to reach my goal, the muscular endurance in my legs is the most needed.

My circuit will consist of: squats, walking lunges, wall sit, mountain climbers, resistance band leg raises.

### **Squats**

<https://www.healthline.com/health/fitness-exercise/muscular-endurance-exercises>



I will stand with my legs at shoulder width apart and my arms reached out in front of me. I will then bend my knees in to the squat position and reach my arms out in front of me still. My bottom and knees will be in line when I am in the squat position and my back will be reached forwards slightly but not over my knees.

### **Lunges**

<https://www.healthline.com/health/fitness-exercise/muscular-endurance-exercises>



I will stand with my feet together and my hands on my waist. Then, I will step forwards with my left leg in to a lunge. My right leg will be straight at the back and my left foot will be flat on the floor. My left knee will be directly over my left foot in a right angle and my back will be up straight. My hands will remain on my hips and my right foot will be on the ball. I will then repeat this with my right leg forwards.

### **Wall Sit**

<https://www.coachmag.co.uk/leg-exercises/5727/the-wonderful-wall-sit-a-great-exercise-to-prevent-runner-s-knee>



To prepare, I will stand with my feet at shoulder width apart with my back straight and against the wall. I will then bend my knees and step out with my feet like shown on the picture, to then be in a squat position against the wall. My knees and feet should be in a right angle and my hands clasped together in front of me. My back should remain straight up against the wall also, my head should be up. My feet should be flat on the floor also.

### **Mountain Climbers**

<https://www.popsugar.com/fitness/How-Do-Mountain-Climbers-43619009>



To prepare, I will be in a press up position with my arms fully stretched out in front of me and my legs also stretched out behind me. My feet should be on the ball and my back should be in a straight line. When I begin, my right leg should flex and be brought up by my hips. I will then put the ball of my right foot on the floor and put all of my body weight on it. I will then bring my left leg up to be flexed by my hips and swap my right leg to be stretched out behind me again. I will repeat this on both legs many times.

### **Resistance band leg raises.**

<https://www.outsideonline.com/2397255/best-resistance-bands-exercises-legs>



To prepare I will stand with my legs together and place the band around my ankles. My back should be straight and my hand should be on my hips. I will then begin the exercise and stretch my left leg out behind my not very high off the floor and still with my foot flexed like on the picture. I will hold this for a couple of seconds and then bring it back together with my right leg. I will then repeat this on my right leg keeping it straight and my foot flexed. My hands will always be on my hips and by back will always be straight.

All of these exercises are specific to muscular endurance and this will help show progression because I can focus on my leg muscular endurance and see where I can improve further and what I have already achieved. Also, I can overload this practice by working my body harder than it normally would whilst doing these exercises as part of my circuit. To do this I could, increase the working time on each station and also I could possibly add weights to the squats and lunges. This will overload my body and therefore adaptation occurs. FITT comes in to overload because these are the things that I can focus on to then overload my body in these exercises. Frequency, intensity, time and type can adapt your body even more to these exercises. I can do this circuit more often a week and increase working time. Also, I could put different exercises to show different types of training in the circuit to then try and overload different parts of my body. Progression will therefore occur because I will have made even more demands on my body. This will decrease the amount of time it takes for progression to happen and I will get my results faster.

However, I need to make sure that I don't overdo it because I don't want reversibility or injury could occur. My performance could deteriorate if my training stops or decreases the intensity for a long period of time. In the same way, if I get an injury from pushing my body beyond my capabilities then my performance will also deteriorate because my training would therefore stop also.

## **Practice 2**

For my second practice I will be doing continuous training. Continuous training is when you continuously train without rest periods. This will increase my muscular stamina and train my muscles to work for longer periods of time. For this I will do continuous training on an exercise bike. I could do this 4 times a week every week on top of the circuit training from practice 1. I will also complete this 4 times a week for a 6 week period and then see my results at the end.

<https://www.menshealth.com/fitness/g23064646/best-exercise-bikes/>



To do this, I will adjust the seat at the height I need it to be in order to use the bike as effectively as possible. Also the bike will be at a resistance of 2 to prevent injury and this will then stay the same so I don't overload too much and cause reversibility because of an injury. I will increase the amount of time I spend on the bike each week. On week 1-2 I will spend 30 minutes on the bike because you have to be doing at least 20 minutes of exercise for anything to start happening to your body. On week 3-4 I will then start to increase the amount of time I spend on the bike to 40 minutes. Finally on week 5-6, I will then further increase the amount of time I spend on the bike to 50 minutes to really overload my body, so it can reach its maximum potential.

This practice is specific to muscular endurance because it will train my legs to keep working for a longer period of time. It is very relevant to the component of fitness I would like to improve because I think that cycling will not only build up the muscles in my legs, it will make sure that I can hold positions like an arabesque for a longer time than I did before and also help me last all the way through a routine without my muscles giving up and tiring.

I can overload this practice by working my body harder and causing some stress and discomfort to the muscles in my legs. I can overload by using FITT. Frequency is the amount of times I do this practice so I can start at doing this practice 3 times a week and then 4 times a week and then 5 times a week. This will push my body harder than it would usually work, without causing an injury. I can also increase the intensity and time that I do this practice. The intensity can be overloaded because I can then increase the tension of the bike so that my legs have to work harder. I could then increase the amount of time that I am on the bike with the same tension. The amount of time will help me to overload because I am pushing my body a lot further than I usually would.

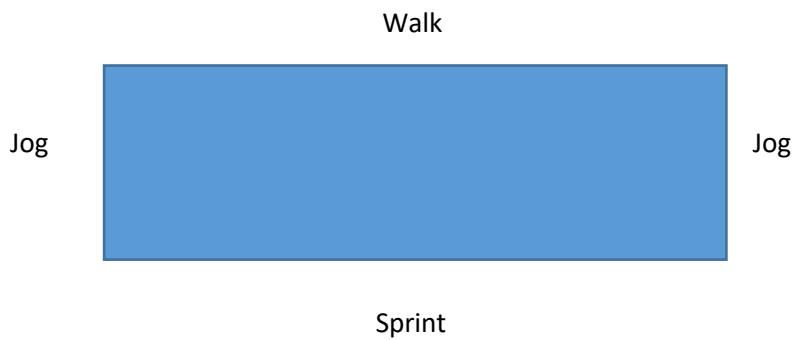
Due to the specific exercises and the overload, I can then progress. I will have adapted to the exercises and then I can progress and push my body even further and then even further. With each adaptation, my body will adapt and therefore progress. If I keep doing this, then my body will keep progressing until it reaches the maximum in this particular component of fitness. However, if I do push myself too hard on the overload or progression then it could cause reversibility or injury. Reversibility is when a performance deteriorates if the training stops. So, if I get injured from putting the tension too high on the bike or training for too long, then I will therefore have to stop training and reversibility will occur.

### **Practice 3**

For my third practice I will be doing fartlek training. Fartlek training is when the speed and intensity of the training is varied. This will help to improve my muscular endurance because it will train my

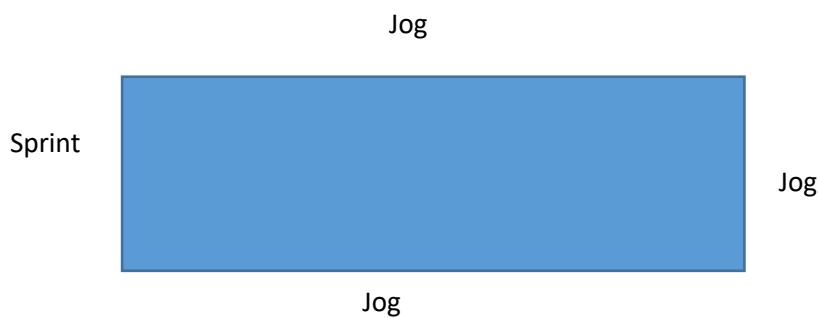
muscles to work for longer. I will be doing this for a 6 week period and overloading the fartlek training over time.

**Week 1-2**



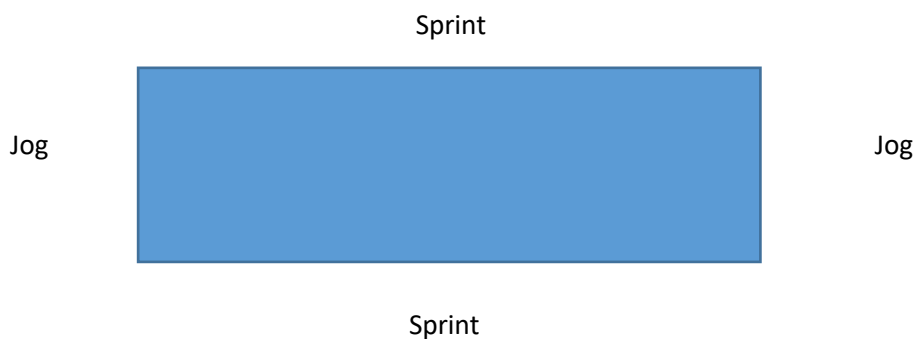
This will be a 25m x 25m square. I will do this 2 times a week and I will do this for 5 minutes for week 1-2. This will improve my muscular endurance because I won't be pushing myself too hard but, my muscles will start to be able to last longer doing physical activity.

**Week 3-4**



I will do this 3 times a week and I will do this for 8 minutes for week 3-4. This will improve my muscular endurance because it will be overloading my body and pushing it harder than I did in week 1-2.

**Week 5-6**



I will be doing this 4 times a week and I will do this for 10 minutes for weeks 5-6. This will improve my muscular endurance because I have overloaded even more and my legs will now be able to endure a more strenuous fartlek program.



The fartlek is specific to my goal because it makes sure that the endurance in my legs is there and that I can do the training for a length of time. It is relevant because I need my leg muscles and my abdominals to be able to hold the position I want to and fartlek training will improve the strength and stamina of these muscles over a long ballet routine or a balance such as a lifted arabesque.

I can overload this training by making sure that I push my body harder than usual and put my muscles under more stress and discomfort. I could overload by increasing the frequency of the exercise. I could do this for 4 times a week and then 5 times a week and then 6 times a week. This would overload my body because it would put it under more stress because it would have to do this exercise more often. The recovery will be less and therefore my body will be under more discomfort. Also, I can overload my body by increasing the intensity of the exercise. I could push my body to sprint faster and turn the corners faster and with agility. This will therefore overload my body and make sure that I don't adapt too quickly to the exercise and it still is a challenge for me to complete. Furthermore, I can overload my body in this exercise by increasing the time or duration I complete the fartlek training for. I could complete it for 5 minutes at the start but, then overload to 8 or 10 minutes to make it harder for me and to therefore cause progression.

This will hopefully cause progression for me because by overloading, I have pushed the physical demands on my body and then be able to therefore adapt. This will carry on and my body will adapt to one type of the exercise and then I can put even more demands on my body. Then my body will adapt to those demands and this will carry on until I reach my maximum potential in this particular component of fitness. On the other hand, if I push my body too hard then I could cause reversibility. If I get an injury from pushing myself too hard in this exercise, my training will have to stop and then my performance will deteriorate. My body will come out of the routine of training and it will start to reverse.

### **Risk assessment.**

During this action plan, there are lots of hazards and risks that need to be addressed and dealt with properly. The OCR Cambridge National definition for a risk is: the chance that someone will be harmed by the hazard. The OCR Cambridge National definition of a risk assessment is: the technique by which you measure the chances of an accident happening, anticipate what the consequences would be and plan actions to prevent it. This means that before performing or doing an activity, you have to assess what could happen as a consequence of an accident.

In my practice 1, I have lots of different activities to be aware of risks and hazards. In my circuit training, I have the following activities: squats, walking lunges, wall sit, mountain climbers, resistance band leg raises. For the squats, I will have to consider the weights I will be using. I should put a mat underneath my feet and only use a weight that I can handle safely. The weight should have a grip on the bar that I can grip my hands on to and before putting it onto the floor, I should look to see if the mat is clear and safe before placing it down. This is to prevent any sort of strain or sprain on my ankles or wrists and to prevent any harm of anybody else who might be in the way when I am putting the weight back down on to the floor.

For the walking lunges, again I have to be careful of weights and make sure that before each lunge nothing is in the way of my feet. Before I begin, I should put a mat down to prevent me slipping on the floor or any wet that might be on the floor. For the wall sit, I should just make sure that I am on a mat to prevent any slip or trip. Also I should check the floor and the wall for sharp objects or anything that would be a hazard to me.

For the mountain climbers, I should just be on a mat to prevent slipping and also make sure that I am not in the way of anybody else and out of the way of any walls or hard surfaces.

Finally, for the resistance band leg raises, I should be stood on a mat out of the way of anybody or any hard surfaces. Also, the resistance band should be secured around my ankles but, not too tight or too resistant. In practice 2, I am on an exercise bike. For this I should make sure that the bike is in an open and clear space, that I will not come in to contact with any hazards whilst on the bike. Also, I should make sure that the bike works properly and is safe to use. I should put the bike on a safe tension for my body to prevent injury. For practice 3, I am doing Fartlek training. I should again be in a clear space where I won't be in the way of anybody or any possible hazards. I should be in a sports hall or an AstroTurf and I should make sure I follow the instructions of how to execute this activity safely and properly.

There are 5 ways to prevent injuries or health problems associated with sport or physical activity. The 1<sup>st</sup> way is personal protective equipment. This is to protect against the most likely injuries. For any of my practices, no protective equipment is really needed as I will be inside during all practices and none of the bases on the circuit or a plank or an exercise bike are very dangerous or have any protective equipment needed.

The 2<sup>nd</sup> way to prevent injuries or health problems associated with physical activity is wearing the correct clothing and footwear. For practice 1, it would be important to wear tight fitted clothing because you want to prevent any clothing getting caught on anything or getting tangled because this could cause an injury or definitely a hazard. Also for practice 1 I should be wearing sports trainers. This is because they would give me more grip on exercises such as the mountain climbers or walking lunges. For practice 2, I should again be wearing tight fitted clothing and sports trainers because long, flowing clothing could get caught in the bike and could cause quite a serious injury if I was cycling at a high speed.

The 3<sup>rd</sup> way to prevent injuries or health problems in physical activity is appropriate level of competition. This does not really apply to me because all of my practices and in fact my sport (ballet) are singular exercises. I will not have an opponent and need an appropriate level of competition. However, I understand that an appropriate level of competition is needed in sport because it then makes it fair. For example, you would not have a Sunday league football team playing Liverpool's 1<sup>st</sup> football team because they are much more advanced and there is a more likely chance of injury to occur.

The 4<sup>th</sup> way that you can prevent injuries or health problems in physical activity is lifting and carrying equipment safely. This is important in all of my practices and especially in practice 1. In practice 1, I have lots of mats and weights to carry and if not done correctly could cause an injury. I should carry a mat with 2 hands by the side of my and still look where I am going to prevent coming in to contact with anything. I should carry 1 weight at a time and with 2 hands. I should then place it sensibly down on to the mat where I will be executing that particular exercise. In practice 2, I have an exercise bike. If this needs transporting, I should get another person to help me and always be aware of my surroundings. In practice 3, I should also carry a mat with 2 hands and be aware of where I am and what is around me.

The final 5<sup>th</sup> way of preventing an injury or a health problem whilst doing physical activity is the use of a warm up and a cool down. This is important because it gets your muscles warm and gets the blood flowing to your working muscles. This gets the oxygen there and warms everything up. This will prevent any injury because your muscles are warm and not stiff. This will prevent any sort of

strain or sprain occurring because you are loose and warm. The warm up consists of: the pulse raiser, mobility, stretches, dynamic movements and sports specific or skill rehearsal. The pulse raiser raises the amount of beats of your heart per minute. Its job is to get your blood around your body and therefore the oxygen to the working muscles. The mobility is to open the range of movement at a joint. These could include high knees or open and closing the gates. This help to get any clicks out of your joints and loosen them. Stretches are also to loosen up your muscles and prevent injury. This makes your muscles less stiff and more moveable. Dynamic movements are sharp powerful movements with a change in direction and these are to also get your body ready to do strenuous movement. The cool down is to cool your muscles down after strenuous activity. It included stretches and soft movements. Its job is to try and release the lactic acid from your muscles which will then reduce muscle ache or pain.

There are 7 types of injury that can occur whilst doing physical activity. The 1<sup>st</sup> type of injury that can occur is a head injury. These are when you are most likely knocked unconscious and suffer a concussion. Head injuries can be very serious to your health and in certain cases, could result in brain damage or very serious medical issues.

The 2<sup>nd</sup> type of injury is a spinal injury. A spinal injury is treated very seriously and can result in lasting damage. When this occurs you shouldn't move and wait for the ambulance. These also could result in being paralysed and in a wheelchair. Your spinal cord is where most signals get from your body to your brain. If you injure this, it is very serious.

The 3<sup>rd</sup> injury that could occur is a fracture. These can range from a minor hyaline fracture or a major compound fracture. As well as injuring bone, they can often damage tissue, tendons and ligaments. Fractures can heal from 2-12 weeks depending on how minor or major the fracture is.

The 4<sup>th</sup> type of injury is a dislocation. Dislocations can be caused by a blow or falls. This occurs when a joint has a lot of pressure put on it and the bones that usually join the joint together dislocate or tear apart. This can be a minor injury and usually occurs in knees or shoulders. It can take the same amount of time as a fracture to heal but is very painful and will need to be put back in to place at the hospital.

The 5<sup>th</sup> type of injury that can occur by doing physical activity is a sprain. A sprain is a tear to a ligament caused by an over stretch and usually they occur in ankles, knees and wrists. Usually sprains take a week to 3 months to heal depending on how bad the sprain is.

The 6<sup>th</sup> type of injury that can occur is a strain. A strain is a twist or tear of a muscle or a tendon and it can be caused by the overuse of the joint or an over stretch. It is similar to a sprain but, it occurs in muscles and not in a joint or ligaments.

The final 7<sup>th</sup> type of injury is a blister and these are quite minor injuries. Going to a hospital is not usually needed and they are caused by friction between shoes and skin. A blister plaster is put over the top of the blister and it usually heals quite quickly.

You can treat injuries with the RICE treatment. The R in RICE stands for rest. This helps to avoid aggravating of the injury. The I in RICE stands for ice. You should but ice on the injured part of the body to reduce swelling and possibly numb pain. The C in RICE stands for compression. Compression helps to stop the swelling of the joint or injury. The E in RICE is elevation. This helps to reduce the blood circulation to the particular injury and particularly for sprains this would help.

**Principles of Training SOPR FITT.**

I have included SOPR FITT all the way through my action plan and I have linked each practice to this clearly. I understand that the S stands for specificity and this means that the training should be specific and relevant to the activity or the type of sport occurring. I understand that the O stands for overload and this means the body works harder than normal so that there is some stress or discomfort occurring. Our bodies respond by adapting to the stress and therefore adaptation and progression occurs. Within overload, this is where FITT comes in. F stands for frequency or how often you perform the exercise or activity. The I stands for intensity or how hard you push your body whilst doing an activity. The T stands for time or how long you are doing the exercise. The duration. The final T stands for type and this represents the 7 types of training. The P in SOPR stands for progression and this means that once adaptations of overload have occurred, the performance should make even more demands on the body. The R stands for reversibility and this means that if training stops or the intensity decreases for a long period of time, the performance will deteriorate.

### **Final Evaluation**

In my NEA coursework for GCSE PE, I chose ballet as my sport because it is the sport that I feel I am the strongest at and that I could write the most about. Ballet has been easy for me to write about because there are lots of very basic steps and also hard advanced steps. Ballet does come naturally to me which is why ultimately I chose it for my NEA course work. My action plan is based on trying to improve my muscular endurance. This was important to me to try and improve because I wanted to increase my amount of muscular endurance to then execute an arabesque perfectly. During my course work, I have evaluated all the different components of fitness and analysed how they link to ballet. Also, I have analysed a piece of my own to then see my strengths and weaknesses within this sport. I feel like I have successfully evaluated and analysed in depth my performance throughout.

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